

PREGNANCY, EXPOSURE TO PESTICIDES AND INFANT LEUKEMIA IN BRAZIL

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Background and Aims: Infant leukemia (IL) is a rare hematological neoplasm associated with *MLL* gene rearrangements. Maternal exposures during pregnancy to pesticides, hormones, dipyrone, and topoisomerase-II DNA inhibitors and high birth weight were associated risk factors.

Methods: This is a hospital-based multicenter case-control study. Mothers of 252 IL cases and 423 controls were interviewed and data were obtained regarding environmental maternal exposure during periconceptional, pregnancy and breast-feeding periods, including exposure to pesticides. Unconditional logistic regression was performed and odds ratios (OR) on the association between maternal pesticides exposure and IL, including their 95% confidence intervals (CI), were ascertained after adjustment to hormonal intake during pregnancy, mother's age, mother's level of education, birth weight and infant's skin color.

Results: An adjusted OR, 2.39, 95% CI, 1.63-3.51 was observed for the association between IL and maternal exposure to pesticides during pregnancy, being higher for acute myeloid leukemia (adjusted OR 3.50, 95% CI, 2.01-6.11). The use of pyrethroids during pregnancy revealed an OR 2.18 (95% CI, 1.44-3.29), while the use of other pesticides showed an OR 3.61 (95% CI, 1.69-7.73). The reported household use of pesticides revealed an adjusted OR 2.25 (95% CI, 1.48-3.43), and agriculture exposure showed an adjusted OR 9.26, (95% CI, 2.82-30.4). According to frequency of exposure, an adjusted OR, 2.48 (95% CI, 1.50 - 4.00) was seen among those reporting up to 1 contact weekly, and an adjusted OR 2.34 (95% CI, 1.30-4.21) among those with > 1 contact (p-trend < 0.0001). Mixed exposure to different pesticides showed an adjusted OR, 3.83 (95% CI, 1.33-11.0) and the exposure to different chemical classes revealed an adjusted OR, 8.87 (95% CI, 1.55-50.6).

Conclusions: The observed results seem to support the hypothesis that mothers' household use of pesticides and other contaminants may be involved in the etiology of infant leukemia.